IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Philippe BERTHAUD et al.
Serial No. :
Filed : Herewith
For : LASER WELDING FOR DRUM BASE
Art Unit :
Examiner :

PRELIMINARY AMENDMENT

Hon. Assistant Commissioner for Patents,
Washington, D.C. 20231

Sir:

Please amend the application noted above as follows.

In the Drawings:

The Examiner's authorization is requested to allow a change to Figure 4, marked in red on the accompanying drawing sheet. The requested change is to show applicants' laser beam location for the recited Through Welding method.

In the specification:

Page 1, line 7, insert the following as a section heading :

--BACKGROUND OF THE INVENTION--

Page 1, line 22, insert the following paragraph:

--SUMMARY OF THE INVENTION

The present invention provides a solution which is economical and which facilitates accurate drum mounting.--

Page 2, line 15, insert as a section heading:

--BRIEF DESCRIPTION OF THE DRAWINGS--

Page 2, line 29, insert as a section heading:

--DETAILED DESCRIPTION--

Page 5, line 5, amend the paragraph as follows:

--Fig. 4 shows with a schematic illustration the principle of a welding jig 10 used for the lower drum assembly procedure according to the present invention. The welding jig 10 essentially comprises a holder 11 and a shaft 12. The shaft 12 is similar to drum's driving shaft but, in this case, used as a facility to arrange lower drum 1 and drum base 2 in connection with a drum base fixation jig (not shown). As it is illustrated by means of arrows 13a, 13b the drum base fixation jig engages with the drum base 2 in a defined manner in order to fit and press drum base 2 and lower drum 1 together before joining them together by welding due to the respective application of the laser beam 8: According to the method "through-welding", the laser beam 8, labeled (Through) in Fig. 4, is applied to the chassis mounting surface of drum base 2 and is approximately square to the surface of the drum base 2, as depicted in Fig. 4. According to the "side-welding" method, laser beam 8, labeled (Side) in Fig. 4, is radially applied as depicted. In Fig. 4 drum base 2 is shown with region 9 of reduced thickness when laser beam 8 is used for "through-welding".--

In the claims:

Page 13, line 1, amend follows:

--What is claimed is: --

Cancel claim 6 without prejudice.

Amend the claims as follows:

1. (Amended) Rotary drum for a tape recorder for recording and/or reproducing signals according to helical scan system, comprising:

a rotary upper drum;

a stationary lower drum for mounting said rotary upper drum; and,

a drum base for mounting said stationary lower drum to form an assembly having a tilt angle with regard to a tape deck chassis plane, wherein said drum base and said lower drum are welded together at an abutting area of the drum base and the lower drum.

2. (Amended) The rotary drum according to claim 1, wherein said drum base and said lower drum are welded with a laser beam.

3. (Amended) The rotary drum according to claim 1, wherein said drum base and said lower drum are through-welded by a laser beam directed towards a lower side of said drum base.

4. (Amended) The rotary drum according to claim 1, wherein said drum base is provided with regions of reduced thickness for laser beam welding.

5. (Amended) The rotary drum according to claim 1, wherein said abutting area of said drum base and said lower drum are welded by laser beam applied radially at predetermined circumferential locations.

Add the following:

--7. The rotary drum according to claim 3, wherein said laser beam is applied orthogonally to said lower side of said drum base.

8. The rotary drum according to claim 3, wherein said laser beam is applied orthogonally to said abutting area of said drum base and said lower drum from said lower side of said drum base.--

In the Abstract:

Page 8, delete in total and replace with new Abstract provided herewith on a separate sheet.

REMARKS

The application is amended to comport with USPTO practice. Claim 6 is cancelled without prejudice and new dependent claims 7 and 8 are added.

Applicants request the Examiner's authorization to change Figure 4, of sheet 2, to show laser beam 8 as disclosed and claimed for the "Through Welding" method. The laser beam positions are discussed starting at page 4, line 9 to page 5 line 21. A marked up drawing is provided herewith with the requested changes marked in red. The specification is amended at page 5 to reference the requested drawing change. No new matter has been added.

No fee is believed to be due.

Respectfully submitted
Philippe BERTHAUD et al.

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AMENDMENTS WITH MARKINGS TO SHOW THE CHANGES MADE

In the specification:

Page 1, line 7, insert the following as a section heading :

--BACKGROUND OF THE INVENTION--

Page 1, line 22, insert the following paragraph:

--SUMMARY OF THE INVENTION

The present invention provides [It is object of the present invention to provide] a solution which is economical and which facilitates accurate drum mounting [to mount the drum accurately].--

Page 1, line 25, delete following paragraph:

[This object is solved by a drum unit as specified in claim 1. Advantageous embodiments are specified in the subclaims.]

Page 2, line 15, insert as a section heading:

--BRIEF DESCRIPTION OF THE DRAWINGS--

Page 2, line 29, insert as a section heading:

--DETAILED DESCRIPTION--

Page 5, line 5, amend the paragraph as follows:

Fig. 4 shows with a schematic illustration the principle of a welding jig 10 used for the lower drum assembly procedure according to the present invention. The welding jig 10 essentially comprises a holder 11 and a shaft 12. The shaft 12 is similar to drum's driving shaft but, in this case, used as a facility to arrange lower drum 1 and drum base 2 in connection with a drum base fixation jig (not shown). As it is illustrated by means of arrows 13a, 13b the drum base fixation jig engages with the drum base 2 in a defined manner in order to fit and press drum base 2 and lower drum 1 together before joining them together by welding due to the respective application of the laser beam 8: According to the method "through-

welding", the laser beam 8, labeled (Through) in Fig. 4, is applied to the chassis mounting surface of drum base 2 and is approximately square to the [so-called looking-down] surface of the drum base 2, as depicted in Fig. 4. [, and according] According to the [method]"side-welding" method, [the] laser beam 8, labeled (Side) in Fig. 4, is radially applied as depicted [in Fig. 4, for example]. In Fig. 4 drum base 2 is shown with region 9 of reduced thickness when laser beam 8 is used for "through-welding".

Page 6, line 1, delete "CLAIMS" and replace with,

--What is claimed is: --

1. (Amended) Rotary drum for a tape recorder for recording and/or reproducing signals according to helical scan system, comprising:

a rotary upper drum; [and]

a stationary lower drum [(1) and provided with] for mounting said rotary upper drum; and,

a drum base [(2), the drum base (2) and the lower are joined together to form a lower drum assembly by means of which the drum can be arranged in a predetermined manner on a tape deck chassis of the recorder inclusively] for mounting said stationary lower drum to form an assembly having a tilt angle with regard to a tape deck [chassis'] chassis plane, [characterized in that the] wherein said drum base [(2)] and [the] said lower drum [(1)] are [joined together by a] welded [joint at a certain area (F) of the lower drum assembly where] together at an abutting area of the drum base [(2)] and the lower drum [(1) abut].

2. (Amended) The rotary drum according to claim 1, [characterized in that that the] wherein said drum base [(2)] and [the] said lower drum [(1)] are welded [joined together by welding] with a laser beam [(8)].

3. (Amended) The rotary drum according to claim [2] 1, [characterized in that the] wherein said drum base [(2)] and [the]said lower drum [(1)] are [joined together by] through-welding [whereby the] by laser beam [(8) is applied square to looking-down surface of the drum base (2)] directed from a lower side of said drum base.

4. (Amended) The rotary drum according to claim [3] 1, [characterized in that the] wherein said [looking-down surface of the] drum base [(2)] is provided with regions [(9)] of reduced thickness [where the] for laser beam [(8) is to be applied] welding.

5. (Amended) The rotary drum according to claim[2] 1, [characterized in that the] wherein said abutting area of said drum base [(2)] and [the] said lower drum [(1)] are [joined together by side-welding whereby the] welded by laser beam [(8) is] applied [in a predetermined radial manner to get a welded joint at a certain area (F) at circumference of the lower drum assembly where the drum base (2) and the lower drum (1) abut] radially at predetermined circumferential locations.

[6. Apparatus according to helical scan system for recording and/or reproducing signals onto/from a magnetic tape having a rotary drum according to claim 1.]

Page 8, delete in total:

[Abstract

As is well known from video recorders, the rotary drum comprises a rotary part (upper drum) and a stationary part (lower drum), and forms a drum unit with a drum base (2) by means of which the drum is being arranged with a tilt angle with respect to the plane of recorder's tape deck chassis.

According to the present invention, lower drum (1) and drum base (2) are joined together by welding, particularly by means of laser welding. This solution simplifies assembly of lower drum (1) and drum base (2) and reduces costs of manufacturing drum units.

Fig. 4]

-- Abstract

In a video recorder with a rotary head drum, a lower drum (1) and drum base (2) are joined together by laser welding to simplify assembly and reduce manufacturing cost.--

Fig. 4

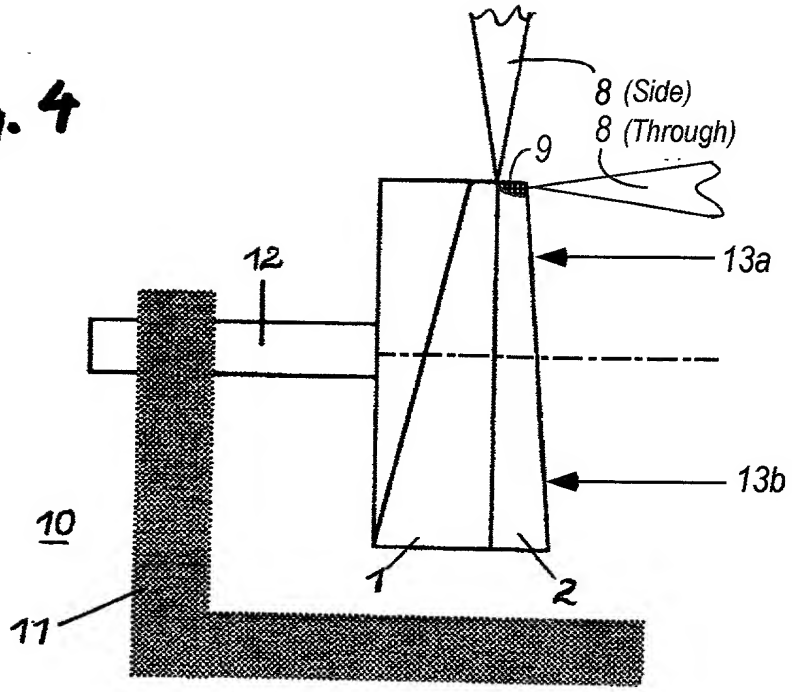
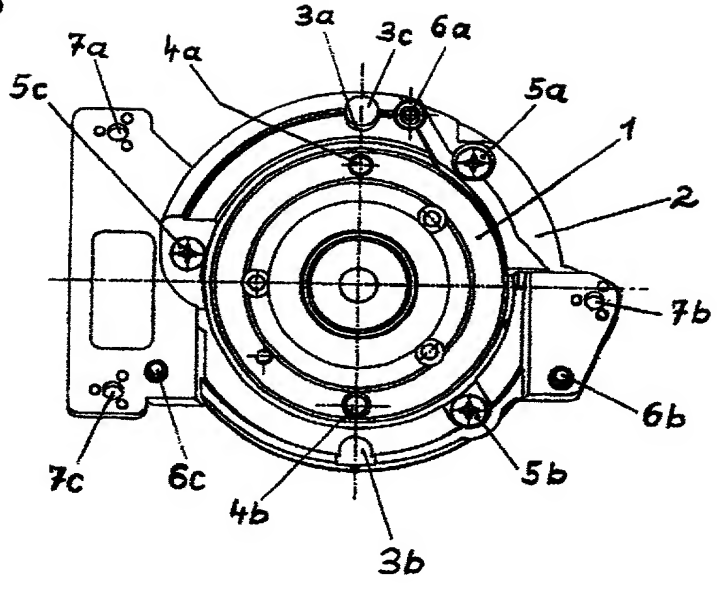

8 (Side)
8 (Through)
9
12
13a
13b
10
11
1
2

Fig. 5


3a
3c
6a
7a
4a
5c
5a
1
2
7b
6b
7c
6c
4b
5b
3b